

## V

### GONORRHOEA

Discussion after addresses by Col. L. W. Harrison and Major E. C. Lambkin, November 26th, 1926

DR. MARGARET RORKE said that she had been greatly interested in Colonel Harrison's paper, especially in his reference to diathermy, and the possibility of this treatment having a provocative action. She had rather come to the conclusion herself that such action did take place. The other day, on using diathermy instruments on a female case that had formerly a very acute urethritis, no pus was present, and condition had cleared well with applications of diathermy. But at the end of one diathermy treatment a bead of pus was again present in the urethra. This suggested that the treatment was having a provocative action on a deeper focus.

Colonel E. T. BURKE said that he rose at the President's request, but he was afraid he could not contribute anything useful to the discussion. He had been extremely interested in Major Lambkin's paper. It was one that should by all means be published, when they would be able to digest it and reason it out according to their own experience, such as it was. But it seemed clear that a distinctly new line of attack had been opened up, which must be pursued in order to see whether it was going to lead to this long-hoped-for miracle whereby the enormous time period that it took to cure a case of gonorrhœa might be reduced. He agreed with Colonel Harrison in thinking that the tests for cure in gonorrhœa were the most important things on which to concentrate, and, as he had said before on one occasion, he did not think the mere taking of slides was at all a conclusive method. He had felt several times that the gonococcus underwent so many curious morphological changes that really one had a suspicion that it became almost a staphylococcus. No case ought to be discharged until, after all sorts of provocative treatment, it gave a negative culture.

Dr. E. J. WYLER said that he was afraid he could not contribute to the discussion, but he had been extremely

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interested in both papers, and especially in what Major Lambkin had told them about the gonococcus. The work outlined seemed to be of very great importance, and he would await with great interest the publication of the paper so that it could be read with the care it deserved.

Dr. F. CARMINOW DOBLE described a condition which had first been diagnosed as rheumatism on account of the condition of the joints; the patient was then found to have many of the symptoms of typhoid fever, and the serum reaction was definitely that of typhoid. There was a history of syphilis, and the treatment card showed that he had two years' treatment and two years observation. His Wassermann reaction was now strongly positive, and his complement fixation to gonorrhœa strongly positive. On examination his prostate appeared normal; the prostatic secretion and urine were normal. He (the speaker) was afraid to give a provocative injection of a vaccine in case it started another disease. This case was only diagnosed as having gonorrhœa by the blood test, and confirmed Colonel Harrison's opinion as to the difficulty in some cases in being certain of cure.

With regard to what Major Lambkin had brought forward, it was noteworthy in his (the speaker's) experience that they were now getting no relapsed cases through. At Millbank the cases were sent up for diagnosis, and if this was positive they were sent straight to Woolwich, and among these cases he had not had a relapsed one now for over a year, whereas they used to occur at the rate of perhaps twenty a month. When he first learned about this vaccine he asked himself how he should turn it to good purpose. Accordingly he collected together several cases which he had been unable to cure, and other people also. One, for example, was a *B. coli* infection which had been going on for seven years. The patient was a sailor—an officer in the Navy—and whenever he was exposed to cold winds on the bridge he got frightfully ill. Two or three times his life was despaired of. Amongst other things he had an enormous prostatic abscess. The speaker had a vaccine prepared for him by Captain Dimond, and although he was able only to give that patient one dose, he learned from the reports from the medical officer of the ship that he had had no attack at all, although he had experienced a very bad time in the Atlantic.

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Another man had a virulent type of acne, chiefly on the forehead. The alkali treatment was tried, and the acne disappeared, but a change took place, and he got enormous pustules on his back, for which he was given a vaccine, and after four injections these disappeared.

Dr. H. McC. HANSCHLI said that he could add but little to the interesting statements made that evening save perhaps on a sideline. He had had for many months under his care in hospital a severe case of acute gonorrhœal rheumatism. The man was entirely crippled, unable to move hands or legs. All the ordinary treatments had been tried, including vaccines and "protein shock," without much effect, although the urethral and prostatic lesions were healed in about ten weeks. Then the speaker tried the new "immunogen"—the vaccine of Horder and Ferry—which appeared to be on the same lines as Captain Dimond's vaccine. This was followed by very rapid and beneficial change. The man was soon able to walk and to move wrist and fingers. Of course, this was only one case, who had been so long in bed that perhaps he was then due for recovery whatever one did. He had since been using this "immunogen" on some cases of gonorrhœa at hospital, but had not yet detected any decided benefit from it in urethritis, though it might be that he was using it wrongly. In the past he had used a number of vaccines in urethritis, but he had never been able to satisfy himself that they had the least beneficial effect, whether he used doses of one million, or one hundred, or one thousand million. He had used gonococcus vaccine as a provocative injection to test for cure, giving it intravenously so as to produce one or two hours later a rigor and fever. It is conveniently thus administered in the evening, the man going straight home to bed, and for the next three days bringing his first morning urine for microscopic examination. By this "test" he had sometimes found that a case which he had thought to be cured was in fact not cured. Very often he had not been able to make any diagnosis in a case. Threads were passed in the urine, and microscopic examination of these threads, not once but a score of times, had never revealed a single bacterium. Even cultures failed to grow, although the threads were packed with polymorphonuclear leucocytes. The threads persisted whatever he could do for the case. Some of these

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men were married, or got married later, and he had had the opportunity of examining their wives in some of the cases. The wives (and the children) appeared to be clean and uninfected, so that he began to think that one could get polymorphonuclear threads without bacterial infection. This is undoubtedly a dangerous belief, for all of these cases gave a history indicating a former urethritis and more or less irrigation or syringing with various antiseptics. They all had a posterior urethritis, as shown by threads in the urine voided after thorough irrigation of the anterior urethra.

Dr. FOWLER WARD said that two or three cases which he had had recently were difficult to explain. They were cases of old chronic vesiculitis, the vesicles being greatly enlarged. On examining these he found them to consist almost entirely of fibrous material, no pus cells whatsoever, and on culture he had got no gonococci. One or two of them he had attempted to cure by injecting colloidal silver through the canal. He did not know that it had much effect, and he certainly had one or two cases where the cord had sloughed, perhaps after the third injection of silver, so he had given that up. But he was still puzzled as to why these cases should persist. They occurred, the majority of them, in married men, and their wives were not infected.

Dr. SHARP desired to ask Major Lambkin whether he injected the gonococcus endotoxin not only into the anterior but also into the posterior urethra. Quite a number of relapses were in the posterior. If the antitoxin was sealed only into the anterior it would not give much information as to any possible relapse of the posterior urethra.

Dr. FELIX PEDROSO (Brazil) said that it had been very interesting to learn from Major Lambkin, in his elaborate report, the effect of vaccine in those cases in which the urine was alkaline. The alkaline reaction of the blood and urine is controlled mainly by the carbon dioxide formed in the system. When there is an increase of the "alkaline reserve" of the blood the virulence of the gonococci is fostered, and a more alkaline condition of the blood is found frequently to be a complicating factor. This is so because the increased alkaline reaction dissolves the protecting covering of the gonococci, thus liberating the endotoxin at a greater rate than the biochemical

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reaction of the tissues can neutralise, and setting up an intense irritation.

The speaker had for a long time been making observations on the effect of respiration on the virulence of the gonococci by means of a special apparatus to measure slight variations in the expansion and contraction power of the lungs. He observed that the more acute the condition the greater was the weakness or deficiency of the contracting power of the lungs, which he found to be responsible for the increase of the "alkaline reserve" of the blood, and that the "alkaline reserve" keeps on increasing till all the available base in the blood is transformed by the carbon dioxide into carbonates or bicarbonates, and then a gaseous acidosis supervenes, which changes the biological behaviour of the gonococcus by increasing its resistance against vaccine and the ordinary process of defence of the organism. This is responsible for chronicity or the latent stage of gonorrhœa. Any factor that reverses the reaction of the blood back to the alkaline condition is what, in his opinion, causes relapses or a latent gonorrhœa to flare up again.

By increasing the power of lungs to contract normally, thus removing the excess of carbon dioxide, the pH of the blood is brought back to normal, and, in consequence, the resistance of the body against the gonococcal infection is restored. This is so because the power of recovery of the organism from any disease, metabolic or infectious, depends on the neutrality of the blood and tissues.

Unless, then, the pH of the blood is modified back to the neutral point, through correct expansion and contraction of the lungs, it is difficult to obtain much result in the treatment of gonorrhœa by any method. This is, therefore, the reason why with vaccine, which acts better in a slightly alkaline reaction, in some cases one gets results and in other cases one fails. The success or failure of the vaccine treatment is therefore decided beforehand by the pH of the blood, which is controlled by the action and removal of the excess of the biological factor—the carbon dioxide.

Colonel HARRISON, replying on the discussion, said, in regard to Dr. Fowler Ward's remark on bacterium-free urethritis, that he had met such cases, and had cured many of them by "masterly inactivity." In other words, they had previously been over-treated.

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He noticed with regret that he had occupied much more time than he had intended in the reading of his opening paper, but he was glad that he had been instrumental in securing Major Lambkin's attendance that evening. He would like to underline the modesty with which Major Lambkin had described his work. Major Lambkin did not claim to have attained the long-desired cure of gonorrhœa, but he thought those present would agree that, whereas they had been wandering in the desert, uncertain as to what it was in the products of the gonococcus which did produce results—if, indeed, any results were obtained at all—they had now reached a path which promised to lead to the long-desired goal.

Major LAMBKIN, also in reply, said that Captain Doble had made some kind remarks about the incidence of the relapsed cases. He had probably not been to Aldershot lately. But there was no doubt that relapses had been on the decrease for a long time. Probably this was due to more effective immunisation. With regard to the "immunogen" referred to by Dr. Hanschell, he had mentioned in reading his report that it was thought that those bacterial washes of the type which Horder and Ferry had brought forward had as their effective substance the small amount of nucleo-protein washed off from the germs—that was, 5 to 10 per cent. of any germ from any media. The success of these vaccines was probably due to this nucleo-protein content of the particular wash.

With regard to the importance of the action of the urine, it was found in the case of a man with constantly acid urine that his type of disease was generally the sort of case that hung fire and would only produce gonococci every now and then. On looking through the urethroscope one found that probably he had chronic folliculitis, and on looking at the smears one found that the distribution in them was quite different, the gonococci being all clumped together in tetrad forms, and the gonococci in that form were extremely resistant. This was the way in which, in this type of case, they formed such resistant foci, and remained untouched by anything that could be put into the urethra. On the other hand, if a man were kept consistently with an alkaline urine, this alkaline urine passing over his tissues actually dissolved the gonococci present in the tissues. The whole organism was lysed, and the product was a toxic substance. In a

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case of gonorrhœa in a man with a persistently alkaline urine all this dissolving went on in his urethra or in his tissues, and the ultimate effect was provocation and an exacerbation of all his symptoms. If this was bad enough and persistent enough he would show signs of irritation in his posterior urethra, and might go on to a frank posterior urethritis. It was found that between the narrow limits of pH 7·2 and 7·4 the conditions were the best.

With regard to endotoxin, there was no doubt about it that endotoxin injected into the anterior urethra would produce a relapse not only of the anterior urethra but also of the posterior. He thought it would be dangerous to put endotoxin into the posterior urethra.